

are two kinds of secondary vascular development; in the one case the pericycle becomes meristematic and adds vascular elements to the stele; and in the case of large roots this is followed by a similar behavior of the cortical cells just outside the endodermis. In *Pandanus* and *Yucca* internal vascular strands were discovered, which are differentiated at the growing point. In the aerial roots of certain Araceae, inside of the radial primary vascular cylinder, there occur scattered groups of xylem and phloem vessels.—J. M. C.

Sex intergrades.—YAMPOLSKY⁷ has brought together the evidence of sex intergrades in flowering plants. The discussion is based upon his results with *Mercurialis annua*, in which he had found sexuality to be a fluctuating character. At the close of the paper he gives a long list of families showing transition from the monoecious to the dioecious condition, and also tabulates the results under 12 types. The general conclusion confirms the view that the potentialities of both sexes exist in all plants, and are not localized in any particular region or cells.—J. M. C.

Endosperm development in Vaccinium.—STEVENS⁸ has described an interesting case of endosperm development in *Vaccinium corymbosum*. Two distinct types of initial endosperm development recognized are free nuclear division and wall formation, and these types have been regarded as characteristic of different genera and even families. In *V. corymbosum*, from material collected from a single plant, STEVENS finds that endosperm development may begin either way. This emphasizes the fact that many of our morphological categories have been too rigidly defined.—J. M. C.

North American flora.—The second part of volume 24 chiefly consists of the completion of the genus *Parosela*, by RYDBERG, 43 species of which had been published in the preceding part.⁹ This genus is recognized to include 178 North American species, 46 being described in the present contribution as new, and many being species transferred from other genera. The three other genera presented are *Thornbera* (13 species, 5 new), *Petalostemon* (42 species, 8 new), and *Kuhnistera* (2 species).—J. M. C.

New species of Piper.—In connection with the biological survey of Panama, conducted several years ago by the Smithsonian Institution, the collected material of the Piperaceae was sent to the late CASIMIR DECANDOLLE, whose determinations have just been published.¹⁰ The collection was found to include 27 new species of *Piper* and 4 new varieties.—J. M. C.

⁷ YAMPOLSKY, CECIL, The occurrence and inheritance of sex intergradation in plants. Amer. Jour. Bot. 7:21-38. 1920.

⁸ STEVENS, N. E., The development of the endosperm in *Vaccinium corymbosum*. Torr. Bot. Club 46:465-468. figs. 4. 1919.

⁹ BOT. GAZ. 68:65. 1919.

¹⁰ DECANDOLLE, CASIMIR, New species of *Piper* from Panama. Smithsonian Miscell. Coll. 71: no. 6. pp.17. 1920.